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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,309	12/29/2000	Benjamin N. Eldridge	P60D1-US	7839
27521	7590	04/30/2004	EXAMINER	
KEN BURRASTON KIRTON & MCCONKIE PO BOX 45120 SALT LAKE CITY, UT 84145-0120			GRAYBILL, DAVID E	
			ART UNIT	PAPER NUMBER
			2827	

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,309

Applicant(s)

ELDRIDGE ET AL.

Examiner

David E Graybill

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32,34 and 65-82 is/are pending in the application.
- 4a) Of the above claim(s) 11,12 and 65-82 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10,13-32,34 and 65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claims 11 and 12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the paper filed on 2-17-4.

Newly submitted claims 66-82 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10, 13-32, 34 and 65, drawn to a product, classified in class 257, subclasses 48 and 773.
- II. Claims 66-72 and 78-82, drawn to a product, classified in class 257, subclass 734.
- III. Claims 73-77, drawn to a product, classified in class 257, subclass 659.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the

subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because claims to both the subcombination and combination are presented and assumed to be patentable, and the omission of details of the claimed subcombination in the combination claim is evidence that the patentability of the combination does not rely on the details of the specific subcombination. The subcombination has separate utility such as for use in a circuit having no bond pad.

Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because claims to both the subcombination and combination are presented and assumed to be patentable, and the omission of details of the claimed subcombination in the combination claim is evidence that the patentability of the combination does not rely on the details of the specific subcombination. The subcombination has separate utility such as for use in a circuit having no bond pad.

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as for use in a circuit having no discharge protection means. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for any one of Groups I, II or III is not required for any other of Groups I, II or III, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 66-82 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The undescribed subject matter is the language, "a bond pad directly coupled to the first part of the circuitry," and, "a special contact pad directly coupled to the second part of the circuitry."

In the rejections infra, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-10, 13, 15-27, 29-32 and 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Puar (5506499).

At column 5, lines 24-50; column 6, lines 33-35 and 43-46; column 7, lines 12-35; column 8, lines 20-36 and 55-63; column 9, lines 15-16;

column 9, line 32 to column 10, line 8; column 10, lines 43-46; column 11, lines 41-46, 57-60 and 65-67; and column 13, lines 1-3, Puar discloses the following:

1. An integrated circuit "wafer" comprising: circuitry comprising a first part 50 and a second part 58, 52; a bond pad 56/58 directly coupled to the first part of the circuitry and for interfacing the circuitry with an external circuit 40; and a special contact pad 60 directly coupled to the second part of the circuitry, the special contact pad for use only when testing the circuitry.
2. The integrated circuit of 1, wherein the special contact pad is smaller than the bond pad.
4. The integrated circuit of 1, wherein the special contact pad is structured to receive a spring contact element.
5. The integrated circuit of 1, wherein the special contact pad is for communicating test data to the circuitry.
6. The integrated circuit of 1, wherein the special contact pad is for communicating data, from the circuitry.
7. The integrated circuit of 1, wherein the special contact pad is for contacting a circuit node internal to the circuitry.
8. An integrated circuit comprising: a first circuit 50; a second circuit 52; a bond pads each coupled to the first circuit, the bond pad for interfacing the first circuit with a circuit 40 external to the integrated circuit; and a special

contact pads coupled to the second circuit, wherein the special contact pad is smaller than the bond pad.

9. The integrated circuit of 13, wherein the bond pads are arranged in a first predetermined alignment and the special contact pads are arranged in a second predetermined alignment.

10. The integrated circuit of 13, wherein the bond pads are disposed along the periphery of the integrated circuit, and at least one of the special contact pads is not disposed on the periphery of the integrated circuit.

13. The integrated circuit of 8, further comprising: a plurality of the first circuits; a plurality of the second circuits; a plurality of the bond pads, each coupled to at least one of the plurality of first circuits; and a plurality of the special contact pads each coupled to at least one of the second circuits.

15. The integrated circuit of 13, wherein at least one of the special contact pads is electrically disposed between two of the circuits to monitor signals transmitted between the two circuits.

16. The integrated circuit of 13, wherein one of the special contact pads communicates test data to one of the circuits, and another one of the special contact pads communicates an output of the circuit.

17. The integrated circuit of 13, wherein one of the special contact pads communicates test data to the one of the circuits, and one of the bond pads communicates an output of the circuit.

18. The integrated circuit of 13, wherein one of the bond pads communicates test data to one of the circuits, and one of the special contact pads communicates an output of the circuit.

19. The integrated circuit of 8, wherein in a first mode of operation the special contact pad communicates data to the second circuit, and in a second mode of operation the special contact pad communicates data from the second circuit.

20. The integrated circuit of 8, wherein the second circuit is an embedded memory array, and the special contact pad communicates address, and test data to the embedded memory array.

21. The integrated circuit of 8, wherein the second circuit includes programmable circuitry "EPROM," and the special contact pad is inherently capable of being used for communicating signals for programming the programmable circuitry.

22. The integrated circuit of 8, wherein the pad is structured to be connected to external circuitry by a bonding wire, and the special contact pad is not structured to be connected to external circuitry by a bonding wire.

23. The integrated circuit of 8, wherein the bond pad is structured to be connected to external circuitry by solder bumps, and the special contact pad is not structured to be connected to external circuitry by solder bumps.

24. The integrated circuit of 8, wherein the bond pad is structured to be in electrical contact with a package for housing the integrated circuit, and the special contact pad is not structured to be in electrical contact with the package.

25. The integrated circuit of 8, further comprising a third circuit 54 having a redundant function of the second circuit, and a plurality of the special contact pads disposed about the second and third circuits to communicate with the second and third circuits.

26. The integrated circuit of 25, further comprising means for communicating with the special contact pads "probes" and for disabling the second circuit "laser" if it is defective and for enabling the third circuit "laser."

27. The integrated circuit of 25, further comprising means for communicating with the special contact pads and for disabling the third circuit.

29. An integrated circuit comprising: a plurality of bond pads 56; an internal circuit 52 not directly monitorable by the bond pads; and at least one special contact pad 60 for directly accessing the internal circuit, wherein said at least one special contact pad is smaller than each of said bond pads.

30. The integrated circuit of 29, wherein the internal circuit comprises an embedded memory array, and the at least one special contact pad communicates address and memory data with the embedded memory array.

31. The integrated circuit of 29, wherein the internal circuit comprises programmable circuitry, and the at least one special contact pad communicates programming signals to the programmable circuitry.

32. The integrated circuit of 29, wherein the bond pads are arranged in a first predetermined alignment and the at least one special contact pad is in a second predetermined alignment.

65. The integrated circuit of 8, wherein the first circuit is coupled to the second circuit.

To further clarify the disclosure of wherein the special contact pad is structured to receive a spring contact element, it is noted that this limitation is a statement of intended use of the product which does not result in a structural difference between the claimed product and the product of Puar. Further, because the product of Puar has the same structure as the claimed product, it is inherently capable of being used for the intended use, and the statement of intended use does not patentably distinguish the claimed product from the product of Puar. Similarly, the manner in which a product operates is not germane to the issue of patentability of the product; *Ex parte Wikdahl* 10 USPQ 2d 1546, 1548 (BPAI 1989); *Ex parte McCullough* 7 USPQ

2d 1889, 1891 (BPAI 1988); In re Finsterwalder 168 USPQ 530 (CCPA 1971); In re Casey 152 USPQ 235, 238 (CCPA 1967). Also, "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."; Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). And, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims."; In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963)). And, claims directed to product must be distinguished from the prior art in terms of structure rather than function. In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does [or is intended to do]." Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

To further clarify the disclosure wherein the bond pads are disposed along the periphery of the integrated circuit, and at least one of the special contact pads is not disposed on the periphery of the integrated circuit, as suggested in Figure 1, it is inherent that the integrated circuit wafer has dice 10 having bond pads disposed along the wafer periphery, and dice having special contact pads not disposed on the wafer periphery, e.g. on the wafer center.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puar (5506499).

Puar is applied for the same reason it was applied to claim 1 supra.

However, Puar does not appear to explicitly disclose wherein the special contact pad has a maximum dimension of approximately 10 microns.

Notwithstanding, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose this particular dimension because applicant has not disclosed that the dimension is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puar as applied to claim 3 supra, and further in combination with Bell (6373143).

Puar does not appear to explicitly disclose wherein the special contact pad has a maximum dimension of approximately 10 microns.

Nonetheless, at column 3, second full paragraph, Bell discloses wherein a special contact pad 26 has a maximum dimension of approximately 10 microns. Moreover, it would have been obvious to combine this product of Bell with the product of Puar because it would desirably enable probe contact and/or minimize pad size.

Claims 14 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puar as applied to claims 8 and 29, and further in combination with Smith (5613861).

Puar does not appear to explicitly disclose the following:

14. The integrated circuit of 8, further comprising a spring contact element attached to the special contact pad.

34. The integrated circuit of 29, further comprising a spring contact element attached to the at least one special contact pad.

Regardless, at column 6, lines 24-29, and column 10, lines 9-12, Smith discloses a spring contact element 15 attached to a contact pad 3. Furthermore, it would have been obvious to combine the product of Smith

with the product of Puar because it would facilitate contact to the contact pad.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puar as applied to claim 8, and further in combination with Amerasekera (6078083).

As previously cited, Puar discloses that the special contact pads have no electric discharge protection circuitry.

However, Puar does not appear to explicitly disclose the following:
28. The integrated circuit of 8, further comprising electrostatic discharge protection circuitry for the bond pads.

Notwithstanding, at column 7, lines 56-61, Ma discloses an integrated circuit comprising electrostatic discharge protection circuitry for bond pads and not for special contact pads. In addition, it would have been obvious to combine the product of Ma with the product of Puar because it would provide electrostatic discharge protection for the bond pads.

Applicant's remarks filed 3-4-3 and 8-4-3 have been fully considered and are adequately addressed by the rejections supra.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a

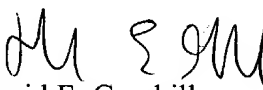
first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 571-272-2815.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.


David E. Graybill
Primary Examiner
Art Unit 2827

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